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Subcutaneous gluteal abscess from *Trichosporon asahii* in an immunocompetent adult

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ABSTRACT

Fungal infections have been drastically increasing in incidence in recent years, preferentially affecting immunocompromised hosts and causing potentially fatal outcomes. One of the emerging fatal fungal pathogens is *Trichosporon asahii*, a non-Candida yeast that has been increasingly reported in recent years. Previous literature has described *T. asahii* as primarily affecting immunocompromised hosts, specifically those who are neutropenic, and causing fatal disseminated infections. Herein, we describe a case of an isolated subcutaneous abscess with *T. asahii* in an immunocompetent host without overlying skin manifestations or predisposing factors that resulted in complete mycotic cure when treated with voriconazole and terbinafine.

KEYWORDS Abscess; adult; gluteal; immunocompetent; subcutaneous; *Trichosporon*

Trichosporon asahii is a rare emerging non-Candida basidiomycetous yeast that is ubiquitously found in water, soil, and vegetation and is a known colonizer of the skin and the respiratory, genitourinary, and gastrointestinal tracts.[1,2] *T. asahii* infection has been reported in increasing incidence in recent years, usually affecting immunocompromised patients.[1–4] It has been reported to cause potentially fatal disseminated infections affecting the brain, heart, lungs, liver, kidneys, and skin.[1] This case is the first report of an isolated *T. asahii* subcutaneous abscess in an immunocompetent host without evidence of predisposing factors.

CASE PRESENTATION

A 46-year-old woman with known hypertension and diabetes mellitus type 2 presented with 1 week of severe bilateral lower-quadrant abdominal pain. Physical exam revealed bilateral tenderness in the lower abdominal quadrants without guarding or rebound tenderness. Her left gluteus was also tender to palpation with no skin manifestations noted. The patient denied any recent travel, recent surgery, or sick contacts.

Complete blood count, comprehensive metabolic panel, lipase, and urinalysis with culture were unremarkable. The erythrocyte sedimentation rate was elevated to 60 mm/h but C-reactive protein was within normal limits at 2.98 mg/L. Computed tomography (CT) of the abdomen and pelvis demonstrated a $9.7 \times 2.2 \times 6.5$ cm subcutaneous abscess in the left gluteal region (*Figure 1*). Magnetic resonance imaging (MRI) of the abdomen and pelvis showed the abscess to be entirely contained within the superficial subcutaneous fat with reactive edema and myositis within the left gluteus maximus (*Figure 2*). Interventional radiology placed a pigtail catheter, drained the abscess, and sent fluid for culture and sensitivity. The patient was admitted and started on intravenous vancomycin 750 mg twice daily, intravenous ceftriaxone 2 g daily, and oral metronidazole 500 mg three times a day for broad-spectrum coverage. On day 2 of admission, the abscess fluid culture began growing yeast. Oral fluconazole 400 mg daily was initiated, and empiric antibiotics were discontinued. On day 3, the yeast was identified as *T. asahii*. Due to the rarity of the infection, infectious disease was consulted and the patient was started on oral voriconazole 400 mg twice daily for 1 day, followed by 200 mg twice a day for 14 days. The patient didn't tolerated voriconazole and was switched to oral terbinafine 250 mg daily.

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The authors report no conflicts of interest. Informed consent for publication of this case was obtained from the patient after assuring her that her identity will remain confidential.

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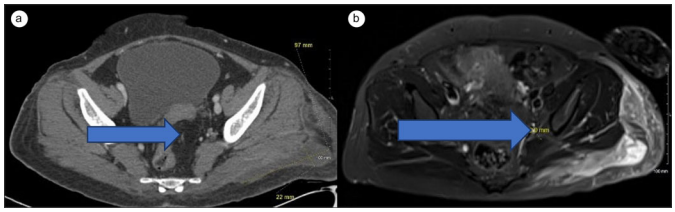

Figure 1. CT of the abdomen and pelvis demonstrating a 9.7 × 2.2 × 6.5 cm subcutaneous abscess (arrow) in the left gluteal region.

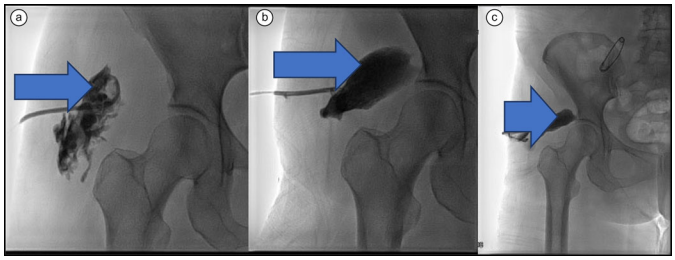

Figure 2. MRI of the abdomen and pelvis obtained 1 day after the CT demonstrating a 8.7 × 7.7 × 12.9 cm left gluteal abscess located entirely in the superficial subcutaneous fat of the left gluteal region with surrounding reactive edema and myositis within the left gluteus maximus.

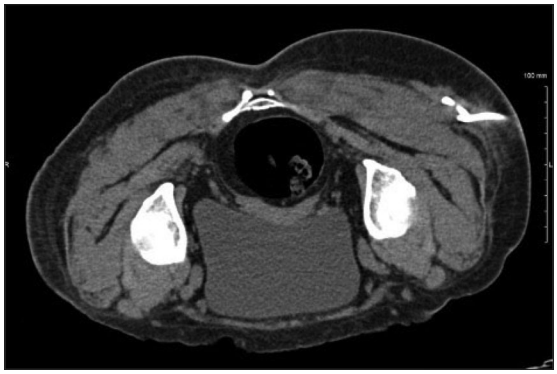

Figure 3. CT of the abdomen and pelvis showing complete resolution of the gluteal abscess.

Due to the rarity of *T. asahii* affecting immunocompetent hosts, HIV testing and routine laboratory tests were performed, which came back negative for HIV and diabetes mellitus type 2. Therefore, this immunocompetent patient had an isolated subcutaneous abscess with *T. asahii* without any overlying skin manifestations or predisposing factors. Outpatient serial fistulograms were performed monthly to evaluate for the radiographic resolution of the abscess, and the pigtail drain was removed 2 months later. After 4 weeks of oral antifungal therapy and 2 months of pigtail drainage, the patient experienced complete resolution of the abscess without recurrence, evidenced by repeat pelvic CT 2 months later demonstrating complete resolution *(Figure 3)*.

DISCUSSION

T. asahii itself is a fatal infection. Its skin involvement is uncommon except in immunocompromised patients.[1,2,4–6] Risk factors causing *T. asahii* infection include recent topical steroid use, surgery, or burn injuries.[6] It is hypothesized that decreased local immunity leads to susceptibility to cutaneous *T. asahii* infections, which was not observed in our patient.[4] A few studies have suggested that prolonged cutaneous infections with *T. asahii* may lead to systemic dissemination of the disease, which can be fatal.[2,3] Therefore, prompt diagnosis and treatment of this rare, potentially isolated cutaneous infection is imperative to prevent deadly outcomes. Reported cases have demonstrated that localized cutaneous infections identified early can achieve curative outcomes, as *T. asahii* is commonly sensitive to voriconazole and amphotericin B.[6] Previous studies have also shown success when treated with fluconazole; however, more recent studies demonstrate the possible emergence of a fluconazole-resistant strain of *T. asahii*, suggesting superior outcomes with treatment with voriconazole.[7] Hence, our patient was switched from oral fluconazole to oral voriconazole to cover possible fluconazole-resistant strains and was ultimately switched to oral terbinafine monotherapy due to side effects of voriconazole. With the combination of oral antifungal therapy and pigtail catheter drainage, our patient achieved complete mycotic cure without recurrence.

In conclusion, *T. asahii* is an emerging rare yeast infection that should be considered in both immunocompromised and immunocompetent patients with subcutaneous abscesses, erythematous plaques, and pustular lesions. It preferentially affects the immunocompromised, particularly those with hematologic malignancies and neutropenic states. Prompt diagnosis and treatment with oral antifungal therapy, such as voriconazole, can lead to complete resolution, whereas a delay in treatment can lead to potentially fatal disseminated infection.

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